

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No: 10/535,266
Applicant: Hiroshi Watanabe
Filed: May 16, 2005
Title: METHOD OF MANUFACTURING
PLASMA DISPLAY DEVICE
T.C./A.U.: 1791
Examiner: Christopher T. Schatz
Confirmation No.: 3761
Docket No.: MAT-8684US

AMENDMENT UNDER 37 C.F.R. § 1.116

Expedited Procedure

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DO NOT ENTER: /C.S./

Sir:

Responsive to the Office Action dated April 8, 2010, please amend the above-identified application as follows:

- ☐ **Amendments to the Specification** begin on page _____ of this paper.
- ☒ **Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.
- ☐ **Amendments to the Drawings** begin on page _____ of this paper and include an attached replacement sheet(s).
- ☐ **Amendments to the Abstract** are on page _____ of this paper. A clean version of the Abstract is on page _____ of this paper.
- ☒ **Remarks/Arguments** begin on page 4 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of manufacturing a plasma display device having a panel in which a pair of substrates having transparency at least on a front side, the substrates being oppositely disposed so that a discharge space and discharge cells are formed between the substrates, and a metallic holding plate that supports the panel via a thermal conductive material, the method comprising:

forming the thermal conductive material of a pull-to-remove type adhesive;

applying the adhesive to one of the panel and the holding plate, and applying heat and pressure to the panel and the holding plate for forming a bulging-out portion of the adhesive bulging out from between the panel and the plate;

curing the adhesive for bonding the panel and the holding plate together;

forming a groove around the holding plate for a portion of the adhesive to flow into the groove so that the portion of the adhesive can be prevented from hanging out outside the holding plate;

wherein the bulging-out portion is formed by bulging out from a part of the holding plate, and the part does not have the groove.

2. - 12. (Cancelled)

13. (Original) The method of manufacturing the plasma display device of Claim 1, wherein a driving circuit block containing a semiconductor device for feeding a display signal to the panel is mounted on a cooling plate on a back side of the holding plate, a portion of the thermal conductive material is exposed from the holding plate, and the driving circuit block-mounted cooling plate is bonded with the exposed portion of the thermal conductive material.

14. (Original) The method of manufacturing the plasma display device of Claim 1, wherein a driving circuit block containing a semiconductor device for feeding a display signal to the panel is mounted on a cooling plate on a back side of the holding plate, a portion of the thermal conductive material is extended to the driving circuit block-mounted cooling plate.

15. - 18. (Cancelled)

19. (Previously Presented) The method of manufacturing the plasma display device of Claim 1, further comprising pulling the bulging-out portion to allow the panel to be removed from the holding plate.

Remarks / Arguments:

The present invention relates to a method of manufacturing a plasma display device with a large screen and low-profile, lightweight body. This invention is designed to be easily disassembled for recycling purposes.

Claims 1, 13, 14 and 19 are pending in the above-identified application. Claims 1, 13, 14 and 19 are objected to. Claims 1 and 19 are rejected. Claims 2-12 and 15-18 were previously cancelled.

Rejections under 35 U.S.C. §112

Claim 1, 13, 14 and 19 are rejected under 35 U.S.C. § 112, first paragraph. The Official Action asserts that claim 1 now requires a bulging out portion of the adhesive be formed and then a groove be formed around the holding plate such that adhesive flows into the groove such that said adhesive is prevented from hanging out. Furthermore, the Office Action asserts that the specification as originally filed does not support both a groove that adhesive flows into and a bulging out portion that is formed.

Applicants respectfully submit that claim 1, as amended, now complies with the written description requirement. Claim 1 has been amended to now include the features:

... a bulging-out portion of the adhesive bulging out from between the panel and the plate; ... **wherein the bulging-out portion is formed by bulging out from a part of the holding plate, and the part does not have the groove.**

(Emphasis Added).

This feature is found in the originally filed application at page 10, lines 13-19. No new matter has been added. Accordingly, Applicant respectfully submits that the specification supports the use of both a groove that the adhesive flows into and a bulging out portion that is formed. Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112, first paragraph.

Claim Rejections under 35 U.S.C. § 103

Claims 1 and 19 are rejected under 35 U.S.C. § 103(a), as being unpatentable over Japanese Patent Application Publication 2002/268577 (hereinafter "Kaneko") in view of U.S. Patent No. 6,496,373 (hereinafter "Chung") in further view of U.S. Patent Publication No. 2002/0193035 (hereinafter "Wei"). It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

Kaneko discloses a plasma display panel 1 that includes a front glass substrate 1A and a back glass substrate 1B. A chassis 3 is secured to a back surface of the plasma display panel 1 with a plurality of double faced adhesive tapes 50. An edge 50A of double faced adhesive tape 50 protrudes beyond the ends of the plasma display panel 1 and chassis 3. Chung describes a heat dissipating arrangement that includes a heat dissipating element 20 and a mechanical fastener 30. A plurality of components 10 are clamped by the mechanical fasteners 30. A melt-flowable thermal interface 100 is disposed between the components 10 and the heat dissipating element 20. Wei describes a panel supply system that includes a panel 200 and a lamination panel 204. The lamination plate 204 includes a trench 206 formed at an edge thereof. A sealing agent 208 is created on an OEL display 202 between the panel 200 and the lamination plate 204. A pressure is applied to the lamination plate 204 and the excess of the sealing agent 208 flows into the trench 206.

Applicant's invention as recited in claim 1 includes a feature which is neither disclosed nor suggested by the art of record, namely:

... applying the adhesive to one of the panel and the holding plate, and applying heat and pressure to the panel and the holding plate for forming a bulging-out portion of the adhesive bulging out from between the panel and the plate; curing the adhesive for bonding the panel and the holding plate together ...

This feature means that an adhesive will be applied to the panel and the holding plate. Heat and pressure will be applied to the panel and the holding plate to form a bulging out portion of the adhesive. The adhesive will then be cured for bonding the panel and the holding plate together. This feature is found in the originally filed application at page 7, line 25 to page 8, line 4 and on page 10, lines 4-13. No new matter has been added.

In paragraph [0024] Kaneko discloses a pressure sensitive adhesive double coated tape 50 that protrudes from the edge of PDP 1 and a chassis 3. Kaneko is silent as to a method where adhesive is cured by simultaneous application of heat and pressure. Thus, Kaneko does not disclose or suggest "applying heat and pressure to the panel and the holding plate **for forming a bulging-out portion of the adhesive bulging out from between the panel and the plate,**" as recited in amended claim 1.

Chung discloses a melt-flowable thermal interface 100 between a heat dissipating element 20 and components 10 attached to a plurality of fasteners 30. (See Chung, Col. 3, lines 40-50.) As can be seen in Fig. 3 of Chung, the melt-flowable thermal interface 100 is not bulging out from between the heat dissipating element 20 and the fasteners 30. Thus, Chung does not disclose or suggest "applying heat and pressure to the panel and the holding plate **for forming a bulging-out portion of the adhesive bulging out from between the panel and the plate,**" as recited in amended claim 1.

Finally, Wei describes that the trench 206 effectively controls the dimension of the sealing agent 208. The Official Action does not cite Wei for any aspects relating to the bulging out adhesive. Thus, Wei does not disclose or suggest "applying heat and pressure to the panel and the holding plate **for forming a bulging-out portion of the adhesive bulging out from between the panel and the plate,**" as recited in amended claim 1.

This is different from the Applicants' invention because, as described above, the Applicants' invention discloses applying heat and pressure to the panel and the holding plate for forming a bulging-out portion of the adhesive bulging out from the between the panel and the plate. As discussed above, neither Kaneko, Chung or Wei, alone or in combination discloses or suggests this feature.

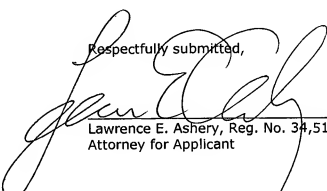
It is because Applicants' include the feature of applying heat and pressure to the panel and the holding plate for forming a bulging-out portion of the adhesive bulging out from the between the panel and the plate that the following advantages are achieved.

Accordingly for the reasons stated above, claim 1 is patentable over the art of record. Claims 13, 14 and 19 include all the features of claim 4 from which they depend. Thus, claims 13, 14 and 19 are also patentable over the art of record for the reasons set forth above.

Conclusion:

In view of the foregoing remarks and amendments, Applicant respectfully asserts that the claims are in condition for allowance, which action is respectfully requested.

Respectfully submitted,



Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicant

ZF/dmw

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P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

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